REMARKS/ARGUMENTS

Reconsideration and continued examination of the above-identified application are respectfully requested.

Claims 1-13 are pending in the present application. Claims 6-8 are withdrawn by the Examiner. Claims 1-5 are amended by way of this amendment to change the spelling of Karl Fisher to Karl Fischer. New claims 9-13 are similar to original claims 1-5. Also, support for the amendment can be found in the Examples and page 5, lines 6-17, and page 9, lines 6-11. No questions of new matter should arise and entry of this amendment is respectfully requested.

Restriction Requirement

At pages 2-4 of the Office Action, the Examiner sets forth the restriction requirement, wherein Group I was elected with traverse.

In response, the applicants affirm the election of Group I. The applicants do believe that the subject matter of claims 6-8 can be examined at this time since claim 6 is dependent on claim 1 and recites an anode made from the metal powder of claim 1. Claims 7-8 relate to a method of evaluating a metal salt or diluent salt and essentially have the same step as claim 1 with respect to measuring the amount of moisture generated by heating a metal salt or diluent salt to 600° C. Accordingly, by examining claim 1, the subject matter of these claims would essentially be examined at this point. Accordingly, the Examiner is respectfully requested to include this subject matter in the elected invention and withdrawal of the restriction requirement is respectfully requested.

Claim Interpretation by the Examiner

At page 4 of the Office Action, the Examiner provides a claim interpretation of the moisture percentage in the present claims.

In response, the applicants have addressed the Examiner's interpretation in the remarks below with respect to responding to the art rejections.

Spelling of "Fisher"

At the bottom of page 4 of the Office Action, the Examiner believes that "Fisher" should read –Fischer--.

In response, both spellings are acceptable and are used by those skilled in the art. Several U.S. patents have used the spelling used in the present claims, while other patents have used the spelling proposed by the Examiner. To assist the Examiner, the claims have been amended to use the spelling proposed by the Examiner, however, realizing that both spellings are permissible.

Rejection of claims 1-5 under 35 U.S.C. §103(a) – Hahn et al. or Chang

At page 5 of the Office Action, the Examiner rejects claims 1-5 under 35 U.S.C. §103(a) as being unpatentable over Hähn et al. (U.S. Patent No. 4,231,790) or Chang (U.S. Patent No. 5,234,491). Essentially, the Examiner indicates that neither patent specifically recites the moisture percentage set forth in claim 1 of the present application, but that each patent recites the use of a diluent salt along with a metal salt, such as a tantalum salt, and that each reference would inherently have the moisture percentage recited in claim 1. The Examiner further indicates that both references discuss the importance of utilizing salts having very low moisture contents and, therefore, at a minimum, the Examiner believes that each reference would suggest to one skilled in the art to use

starting materials that have little moisture. This rejection is respectfully traversed.

From a review of each patent, there is no specific moisture percentage recited in any of these patents relied upon by the Examiner. Chang and Hahn et al. both relate to conventional sodium reduction of tantalum salts and, further, Hahn et al. relates to a salt reduction involving ignition of the mixture when the mixture is a paste.

In the present application, a method is described and claimed which involves using a metal salt and diluent salt that has a combined total percentage of moisture of 0.2% by mass or less. It appears from the Examiner's comments that the Examiner believes this would be inherent in Chang or Hahn et al. However, the applicants respectfully disagree. As noted at page 6, beginning at line 12 of the present application, conventional methods involving the reduction to a tantalum or niobium powder using a metal salt and diluent salt typically involved heating the metal salt and diluent salt to 250° C or less to produce the metal powder. However, as explained at page 6, beginning at line 12 of the present application, crystal water (which can also be considered chemisorbed water) is not desorbed by heating to 250° C or less. Thus, the crystal water is not removed by such a heating process and, therefore, this residual moisture in the diluent salt and metal salt is not accounted for and can be a primary factor for increasing the amount of impurities contained in a metal powder. As explained in detail at page 2 of the present application, when tantalum or niobium metal salts are used as a raw material, or a diluent salt is used containing moisture, the reaction vessel reacts with this residual moisture and creates impurities in the metal powder, such as Fe, Ni, Cr, and Mo, which are derived from the reaction vessel. Thus, the present inventors discovered the importance of using metal salts and diluent salts that have a low amount of total percentage of moisture, which is determined based on a Karl Fischer method wherein the metal salt and diluent salt are heated to a temperature of 600° C.

The Examiner's attention is drawn to Table 2 of the present application where, in the last column of Table 2 (right side), the Examiner will note that there are Examples 2-7 of the present application and Comparative Examples 1-3. It is noted that the Comparative Examples 1-3, at times, have the same total moisture content for the diluent salt and metal salt if this amount is determined at 200° C. For instance, Comparative Example 1 has the same total moisture content as Examples 2 and 3 and, further, Comparative Example 2 has the same moisture content as Examples 4 and 5 of the present application and Comparative Example 3 has the same moisture content as Examples 6 and 7. However, the Examiner's attention is further drawn to the amount of impurities found in the metal powder when using these various salts, and the Examiner will see that Comparative Examples 1-3 had very high ppm levels of metal impurities in the metal powder, on the order of 58 ppm to 110 ppm. To the contrary, Examples 2-7 of the present application had metal impurities of 20 ppm or less. Furthermore, the Examiner's attention is drawn to the third column from the right, which is the total moisture content in the diluent salt and metal salt based on a Karl Fischer method determined by heating the metal salt and diluent salt to 600° C after first removing the moisture at 200° C. As can be seen, Comparative Examples 1-3 had a significantly higher level of total moisture in the diluent salt and metal salt compared to Examples 2-7, which lead to a higher amount of metal impurities in the metal powder. Thus, the present invention involves utilizing particular types of metal salt and diluent salt that have a moisture content of 0.2% by mass or less, wherein this moisture content is based on a method of heating the metal salt and diluent salt to 600° C after first removing the moisture at 200° C to ensure that all of the moisture is taken into account (that is, crystal water, as well as physisorbed water). By doing so, the present application leads to a superior and unexpected beneficial method of ensuring that the amount of impurities in the metal powder is much lower as a result.

It is respectfully submitted that the references cited by the Examiner, namely Chang and Hahn et al., do not teach or suggest collectively using particular types of metal salt and diluent salt based on the total moisture content based on the Karl Fischer method set forth in the present application. In fact, from a reading of Hahn et al. or Chang, there is no attempt to understand the moisture content of the metal salt or diluent salt, and both references simply process the metal salt and diluent salt in a conventional salt reduction method which is like that described at page 6, beginning at line 12 of the present application. In other words, Hahn et al. and Chang never took into account the effects of crystal water and how this affects the total impurities created in the metal powder. Since Hahn et al. and Chang make no effort to understand the total percentage of moisture present in a metal salt or diluent salt as described in the present application, neither reference teaches or suggests the claimed invention. Accordingly, this rejection should be withdrawn.

Rejection of claims 1-3 and 5 – Non-statutory obviousness-type double patenting

At the bottom of page 5 of the Office Action, the Examiner rejects claims 1-3 and 5 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 7-9 of co-pending U.S. Patent Application No. 10/532,357. The Examiner further rejects claim 4 in view of this same application in view of Hahn et al. or Chang. This rejection is respectfully traversed.

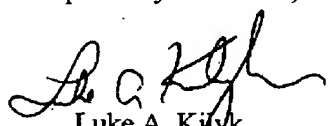
In response, U.S. Patent Application No. 10/532,357 went abandoned on December 24, 2007, according to the applicants' understanding. Accordingly, this rejection is moot.

CONCLUSION

In view of the foregoing remarks, the applicant respectfully requests the reconsideration of this application and the timely allowance of the pending claims.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



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